



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,324	06/08/2007	Alan Finlay	077095-0014	6515

1923 7590 04/15/2009
MCDERMOTT, WILL & EMERY LLP
Attn: IP Department
227 WEST MONROE STREET
SUITE 4400
CHICAGO, IL 60606-5096

EXAMINER

LOGIE, MICHAEL J

ART UNIT	PAPER NUMBER
----------	--------------

2881

MAIL DATE	DELIVERY MODE
-----------	---------------

04/15/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,324	Applicant(s) FINLAY, ALAN	
	Examiner MICHAEL J. LOGIE	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-18 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

Claim 5 objected to because of the following informalities: Claim 5 is missing a “.”, the claim must have a period to be a sentence. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation “the first evacuated chamber being located within the first evacuated chamber” in lines 2-3 is vague and unclear. Does this mean the second evacuated chamber being located within the first evacuated chamber?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-13, 15 and 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Drew et al. (US patent no. 5,313,061).

In regards to claim 1, Drew et al. teach a mass spectrometer system (fig. 1a) including a mass spectrometer device (fig. 1a, 18) provided within an evacuated chamber (col. 3, lines 38-43), the chamber having an entrance port through which a sample may be introduced into the chamber (fig. 2c, 228 also better seen in fig. 14, 228) and into contact with the mass spectrometer device (fig. 14, 228 brings sample into contact with MS 18), the system additionally including a permeable membrane (fig. 14, 16a) located across the chamber between the port and the spectrometer device (as seen in fig. 14 note: col. 8, lines 4-18 and col. 20, lines 16-23) and a valve located between the membrane and the entrance port (fig. 14, 1406) and having an normally closed state (col. 20, lines 50-52 for normally closed state, note: "which is in its normally closed position") and an open state (col. 20, lines 38-40 for open state, note: "the third valve 1406, which is normally closed, thus sending the sample directly to the input of the membrane" which is the opposite of "in its normally closed position" and thus must be in the open state.), such that, in use, the adoption of the open state allows the flow of the sample into the chamber through the membrane and into contact with the spectrometer device (col. 20, lines 37-41 and col. 8, lines 13-18).

In regards to claims 3-4 and 17-18, Drew et al. teach wherein the valve is formed from a rupturable diaphragm sealing the evacuated chamber, the rupturing of the diaphragm breaking the seal and allowing the flow of the sample into the chamber or wherein the valve is formed from a breakable glass member and an actuator, the glass

Art Unit: 2881

member being located across the chamber and sealing the chamber, and wherein, in use, the actuator is adapted to come into contact with the glass member, breaking the member and consequently the seal. (Drew et al. teaches valves being electrically controlled by latching solenoid mechanisms or other means col. 7, lines 55-57, the limitations of claims 3-4 are commonly used in valve structures and integration is common knowledge of the skilled artisan).

In regards to claims 5-8, Drew et al. teach wherein the membrane is formed from a polydimethylsiloxane material, wherein the polydimethylsiloxane material is formed as a liquid layer on a substrate, a polymerisation of the material on the substrate forming the membrane, wherein the substrate is a metal mesh structure or a silicon based substrate (Drew et al. teaches the membrane is a dimethyl silicone col. 8, lines 19-22, the limitations of claims 5-8 are commonly used as membrane structures and integration is common knowledge of the skilled artisan).

In regards to claim 9, Drew et al. teach further including a second evacuated chamber (fig. 1a, 20), the first (assumed second) evacuated chamber being located within the first evacuated chamber (fig. 1a, 20 is located inside of 18), the pressure within the first evacuated chamber being less than that of the second evacuated chamber (col. 12, lines 35-46 and col. 26, lines 6-10).

In regards to claim 10, Drew et al. teach wherein the second chamber includes an inlet and an outlet tube, the inlet tube being adapted to enable an introduction of a sample from outside the second chamber into contact with the spectrometer device

Art Unit: 2881

located within the first chamber (col. 8, lines 13-18), the outlet tube being adapted to enable a venting of gas from the second chamber (fig. 1a, 22).

In regards to claim 11, Drew et al. teach wherein a pump is provided on the outlet tube, the pump adapted to effect a reduction in pressure of the second chamber (fig. 1a, 22).

In regards to claim 12, Drew et al. teach wherein, in the normally closed position, the pressure within the evacuated chamber is less than 10^{-4} Torr (col. 12, lines 35-46).

In regards to claim 13, Drew et al. teach wherein the pressure within the second chamber is reduced to about 10^{-1} Torr (col. 26, lines 6-10).

In regards to claim 15, Drew et al. teach a mass spectrometer system (fig. 1a) including a mass spectrometer device (fig. 1a, 18) provided within an evacuated chamber (col. 3, lines 38-43), the chamber having an entrance port through which a sample may be introduced into the chamber (fig. 2c, 228 also better seen in fig. 14, 228) and into contact with the mass spectrometer device (fig. 14, 228 brings sample into contact with MS 18), the system additionally including a permeable membrane (fig. 14, 16a) located across the chamber between the port and the spectrometer device (as seen in fig. 14 note: col. 8, lines 4-18 and col. 20, lines 16-23) and a breakable seal located between the membrane and the entrance port (fig. 14, 1406 a valve is a breakable seal) and having an normally closed state when the seal is maintained (col. 20, lines 50-52 for normally closed state) and an open state when the seal is broken (col. 20, lines 38-40 for open state), such that, in use, breaking the seal allows the flow

Art Unit: 2881

of the sample into the chamber through the membrane and into contact with the spectrometer device (col. 20, lines 37-41 and col. 8, lines 13-18).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drew et al. (US patent no. 5,313,061) and further in view of Bonne (US patent no 7,367,216).

In regards to claims 2 and 16, Drew et al. differ from the claimed invention by not disclosing wherein the spectrometer device is formed from a MEMS device.

Bonne teaches wherein the spectrometer device is formed from a MEMS device (col. 2, lines 61-65).

Bonne modifies Drew et al. by teaching the spectrometer device fabricated from a MEMS device.

Since both Drew et al. and Bonne teach analysis of a gas sample, it would be obvious to one of ordinary skill in the art to have the spectrometer device fabricated from a MEMS device because this kind of fabrication results in small, low-power consumption and in situ placement of the micro analyzer.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent prior art is closely related art that individually or in combination could be considered grounds for rejection. See references cited for a listing of the pertinent prior art found and the prior art found.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL J. LOGIE whose telephone number is (571)270-1616. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J. L./
Examiner, Art Unit 2881
/ROBERT KIM/

Application/Control Number: 10/589,324

Page 8

Art Unit: 2881

Supervisory Patent Examiner, Art Unit 2881